

CLAIMS:

1. A method of assigning phonemes (P_k) of a target language to a respective basic phoneme unit ($PE_x(P_k)$) of a set of basic phoneme units (PE_1, PE_2, \dots, PE_N), which phoneme units are described by basic phoneme models, which models were generated based on available speech data of a source language,

5 characterized by the following method steps:

- implementing at least two different speech data controlled assigning methods (1, 2) for assigning the phonemes (P_k) of the target language to a respective basic phoneme unit ($PE_i(P_k), PE_j(P_k)$),
- detecting whether the respective phoneme (P_k) was assigned to the same basic phoneme unit ($PE_i(P_k), PE_j(P_k)$) by a majority of the different speech data controlled assigning methods,
- selecting as the basic phoneme unit ($PE_x(P_k)$) assigned to the respective phoneme (P_k) the basic phoneme unit ($PE_i(P_k), PE_j(P_k)$) assigned by the majority of the speech data controlled assigning methods (1, 2) insofar as a majority of the different speech data controlled assigning methods (1, 2) have a matching assignment,
- or, otherwise, selecting a basic phoneme unit ($PE_x(P_k)$) from all the basic phoneme units ($PE_i(P_k), PE_j(P_k)$) which were assigned to the respective phoneme (P_k) by at least one of the different speech data controlled assigning methods (1, 2), while a similarity parameter is used in accordance with a symbol phonetic description of the phoneme (P_k) to be assigned and of the basic phoneme units ($PE_i(P_k), PE_j(P_k)$).

2. A method as claimed in claim 1, characterized

in that at least part of the basic phoneme units (PE_1, PE_2, \dots, PE_N) are multilingual phoneme units (PE_1, PE_2, \dots, PE_N) which are formed by speech data of various source languages.

3. A method as claimed in claim 1 or 2, characterized

in that the similarity parameter in accordance with the symbol phonetic description contains information about an assignment of the respective phoneme (P_k) and about an assignment of the respective basic phoneme units ($PE_i(P_k)$, $PE_j(P_k)$) to phoneme symbols and/or phoneme classes of a predefined phonetic transcription (SAMPA).

4. A method as claimed in one of the claims 1 to 3, characterized

in that with one of the speech data controlled assigning methods (1) in a first step using speech data (SD) of the target language, phoneme models are generated for the phonemes (P_k) of the target language, and then for all the basic phoneme units (PE_1 , PE_2 , ..., PE_N) a respective difference of the basic phoneme model of the basic phoneme unit from the phoneme models of the phonemes (P_k) of the target language is determined, and the respective basic phoneme unit ($PE_i(P_k)$) that has the smallest difference parameter is assigned to the phonemes (P_k) of the target language.

5. A method as claimed in one of the claims 1 to 4, characterized

in that in a speech data controlled assigning method (2) speech data (SD) of the target language are segmented into individual phonemes (P_k) while phoneme models of a defined phonetic transcription are used, and for each of these phonemes (P_k) in a speech recognition system, which comprises the set of basic phoneme models of the basic phoneme units (PE_1 , PE_2 , ... PE_N) to be assigned, recognition rates for the basic phoneme models are determined and to each phoneme (P_k) is assigned the basic phoneme unit ($PE_j(P_k)$) for whose basic phoneme model the best recognition rate was detected the most.

6. A method of generating phoneme models for phonemes of a target language to be implemented in automatic speech recognition systems for this target language, in which, in accordance with a method as claimed in one of the preceding claims, basic phoneme units are assigned to the phonemes of the target language, which basic phoneme units are described by respective basic phoneme models which were generated with the aid of available speech data of a source language different from the target language, and in which then for each target language phoneme the basic phoneme model of the assigned basic phoneme unit is adapted to the target language while the speech data of the target language are used.

7. A computer program with a program code means for carrying out all the steps as claimed in one of the preceding claims when the program is run on a computer.

8. A computer program with program code means as claimed in claim 7 which are stored on a data carrier that can be read by the computer.

9. A set of acoustic models to be used in automatic speech recognition systems, comprising a plurality of phoneme models generated in accordance with a method as claimed in claim 6.

10. A speech recognition system comprising a set of acoustic models as claimed in claim 9.